Lactococcus lactis IO-1, an homolactic fermentative bacteria isolated and characterized at Kyushu University. More than 90% conversion yield of glucose to lactic acid was obtained in basal complex medium under batch fermentation at 37°C, pH 6.0 and 400 rpm. In this study, cassava starch hydrolysate was very appropriate as carbon source for growth and lactic acid production in basal medium. Corn steep liquor was substituted yeast extract as nitrogen source, but could not substituting both yeast extract and polypeptone. Batch fermentation using cassava starch hydrolysate were carried out in 2 L stirr tank reactor containing 10 g/l glucose, 5 g/l polypeptone, 5 g/l corn steep liquor and 5 g/l NaCl. The biomass yields (Y_x/s = 0.12 g/g), product yields (Y_p/s = 0.95 g/g, based on glucose), volumetric productivity (Q_p = 1.25 g/l.h) and specific growth rate (μ_m = 0.30 h⁻¹) were obtained and were the same as reported by Ishizaki et al., 1989. These results show that corn steep liquor can be used as nitrogen source instead of expensive yeast extract and that the continuous fermentation can be performed to increase cell density and volumetric productivity of lactic acid.